

REMARKS

Claims 5 - 15, 17 - 21, 23, 25 - 27, 29 - 41 are pending.

Claims 4, 11 - 18, 22 - 30, 32 - 34, and 36 - 40 were elected with traverse in response to a restriction requirement. However, the Examiner has deemed all the claims to present the same invention, and has therefore examined them together.

Claims 32, 37, and 40 were objected to for being unclear as to "the first circuit," among other informalities for which the Examiner has proposed corrections.

Claim 3 was objected to for being duplicative of claim 2. Claim 3 has been canceled.

Claim 14 was cited in an objection to the drawings wherein not all the elements recited in the claim are shown in the drawings.

Claim 31 was rejected under 35 U.S.C. § 112, Second paragraph.

Rejections under 35 U.S.C. § 102:

- claims 4, 11 - 14, 16, 17, and 19 - 21 for allegedly being anticipated by Goerke et al., U.S. Patent No. 5,698,973; and
- claims 1 - 3 for allegedly being anticipated by Johansson, U.S. Patent No. 5,587,685.

Rejections under 35 U.S.C. § 103:

- claims 15, 18, and 22 - 30 for allegedly being obvious in view of Goerke et al. in view of Rasums et al., U.S. Patent No. 5,572,395;
- claims 5 and 6 for allegedly being obvious in view of Goerke et al. in view of Johansson;
- claims 32 - 34 and 36 for allegedly being obvious in view of Rasums et al.;
- claims 37, 38, and 40 for allegedly being obvious in view of Goerke et al.;
- claims 31, 39, and 41 for allegedly being obvious in view of Goerke et al. in view of Latham et al., U.S. Patent No. 5,760,571, and further in view of a textbook of R. Boylestad and L. Nashelsky, Electronic Devices and Circuit Theory; and
- claim 35 for allegedly being obvious in view of Rasums et al. in view of Lathan et al., and further in view of the textbook of R. Boylestad and L. Nashelsky.

As to the objections raised against claims 32, 37, and 40, these claims have been amended. In particular, the original recitation of “the first circuit” has been replaced with “an electronic device” (claim 32) or “a device” (claims 37 and 40). In addition, the first occurrence of “the power source” has been replaced with “a power source.” Also, claim 31 has been similarly amended.

As to claim 14 and the corresponding drawing objection, Fig. 1 as originally filed shows a detector module 115 and a switch 110. The specification in paragraph [20] on page 3 describes that the “detector module 115 and switch 110 couple to the positive terminal of power supply 107.” Fig. 1 illustrates an embodiment of the invention recited in claim 14. The drawing objection is believed to be overcome.

Section 112 Rejection

As to the Section 112 rejection of claim 31, it is respectfully submitted that claim 31 as originally filed does not describe the second circuit means as supplying the device with noisy power. As recited, “the second circuit means [is] responsive to the control signal so that the amount of power that is applied to the device varies in response to the electrical noise.” The electrical noise present in the power supply is the basis for varying the amount of power applied to the device. The power supply does not supply noise to the device, but rather serves to vary “the amount of power” applied to the device. The specification on page 7, lines 5 - 6 discusses an embodiment of this aspect of the invention wherein “the power delivered to load 112 will be effectively low-pass filtered by the switch.” It is earnestly believed that claim 31 as originally recited conforms to the requirements of Section 112, second paragraph, and the rejection is overcome.

Section 102 Rejection of Claims 1 - 4, 11 - 14, 16, 17, and 19 - 21

Claims 1 - 4 have been canceled without prejudice. The Section 102 rejection of claims 1 - 4 are therefore moot.

As to the Section 102 rejection of independent claim 11 and its dependent claims 12 - 14, 16, 17, and 19 - 21, the independent claim 11 has been amended to recite aspects of the invention illustrated in the embodiment shown in Fig. 2. As amended,

claim 11 recites “a first detector configured to be selectively coupled to and decoupled from [a] source of power.” The first detector comprises “a resistor and a capacitor configured as an RC circuit ... in electrical communication with the source of power.” Fig. 2 illustrates an embodiment of this aspect of the invention, showing resistor 147 and capacitor 150 to be configured as an RC circuit. Claim 11 further recites a switch “wherein the switch is a transistor device having a gate terminal coupled to the RC circuit” to gradually turn on when connected to the power supply.

Goerke et al. is directed to a soft-start switch to which a load can be hot-plugged. As understood, Goerke et al. show in Fig. 4 a circuit that is powered with V_{cc} and V_{ref} , and includes a terminal 30 that receives a voltage level of V_o . A terminal 50 provides a voltage level of V_{out} , to which a load 55 can be hot-plugged.

Goerke et al. do not show a circuit having “a first detector configured to be selectively coupled to and decoupled from the source of power.” The hot-plugging activity in Goerke et al. occurs at terminal 50, where a load 55 plugs to the circuit of Fig. 4. See for example, col. 5, lines 32 - 37 and lines 58 - 62. The Goerke et al. circuit itself is not hot-plugged and so there is no component of the circuit shown in Fig. 4 of Goerke et al. that is “configured to be selectively coupled to and decoupled from” a source of power. By comparison, the circuit exemplar 100 shown in Fig. 2 of the instant application is configured to be connected via connector 105 to a power supply 107 thereby connecting a load 112 to the power supply. For at least this reason the Section 102 rejection is believed to be overcome.

Goerke et al. do not show a first detector comprising “a resistor and a capacitor configured as an RC circuit ... in electrical communication with the source of power.” Instead, Goerke et al. show an op-amp 20 configured as an integrator, the output of which is coupled via resistor 145 to a gate terminal 12 of a transistor 10. The op-amp of Goerke et al. does not constitute “an RC circuit ... in electrical communication with the source of power.” For at least this reason the Section 102 rejection is believed to be overcome.

Goerke et al. do not show a switch “wherein the switch is a transistor device having a gate terminal coupled to the RC circuit.” Since Goerke et al. do not disclose an RC circuit in Fig. 4, it follows that this recited aspect of the present invention is also not disclosed by Goerke et al.

Claim 11 recites a further aspect of the present invention wherein a second detector is “configured to sense current being supplied to the target circuit and to detect when the current exceeds a threshold.” An example embodiment of the second detector is shown in Fig. 2 as the detector 115. As can be seen, the resistor element 132 is placed across the terminals of the op-amp 127. The resistor element is connected in series between the a terminal of the source of power 107 and the node V_{out} . It can be appreciated that this is a conventional configuration for sensing and measuring current flow.

In contrast, Goerke et al. teach a voltage comparator 110. The inverting input 112 is coupled to a voltage divider comprising resistors 170a and 170b, and the non-inverting input 114 is coupled to a voltage divider comprising resistors 180a and 180b, which present to the comparator “two voltages.” Col. 7, lines 16 - 23.. Goerke et al. therefore do not show a second detector “configured to sense current being supplied to the target circuit and to detect when the current exceeds a threshold,” but rather a comparator configured to compare two voltages.

The Section 102 rejection of claim 11 is therefore believed to be overcome in view of the foregoing. Similarly, the Section 102 rejection of dependent claims 12 - 14, 16, 17, and 19 - 21 is believed to be overcome for at least the same reasons.

Section 103: Rejection of Claims 5, 6, 18, and 22 - 41

In response to the Section 103 rejections of the claims, the independent claims 5, 23, 27, 30, 32, 37, and 40 have been amended

Rejection of Claims 5, 6, 15, 18, 22 - 31, 37 - 41

The independent claims 5, 23, 27, 30, 37, and 40 have been amended to recite an aspect of the invention illustrated in the example embodiment shown in Fig. 2.

For example, claim 5 as amended recites a first detector comprising “a resistor and a capacitor configured as an RC circuit.” An example is illustrated in Fig. 2, where resistor 147 and capacitor 150 form an RC circuit.

As discussed above, Goerke et al. do not show in Fig. 4, “an RC circuit,” but rather an op-amp 20 (configured as an integrator), the output of which is coupled (via a resistor 145) to the gate 12 of the transistor 10. The integrator of Goerke et al. does not show an RC circuit as recited in the amended claims. Moreover, Goerke et al. discuss an advantage of the op-amp 20 by providing a feedback means for ensuring that V_{out} tracks fluctuations in V_o . Col. 4, lines 63 and following. This important aspect of the Goerke et al. circuit would not suggest to one of ordinary skill in the art to substitute the integrator with an RC circuit, since to do so would eliminate the feedback provided by the integrator. The Section 103 rejection of the claims based on Goerke et al. are therefore believed to be overcome, for at least this reason.

The independent claims 5, 23, 27, 30, 37, and 40 have been amended to further recite an aspect of the invention wherein “a first detector [is] configured to be selectively coupled to and decoupled from the source of power.” Claim 5. As discussed above, Goerke et al. disclose a circuit to which hot-plugging of a load is made. The circuit of Fig. 4 includes a node 50 to which a load is hot-plugged. For example, Goerke et al. describe the effect on V_{out} at node 50 wherein “ V_{out} is brought quickly to zero (ground) due to hot-plugging a capacitive load.” Col. 5, lines 58 - 60. See also col. 5, lines 31 - 38. Providing for hot-plugging to a circuit as Goerke et al. do does not suggest the circuit as recited in the pending claims.

The additional references cited in support of the Section 103 rejections of these claims do not show or teach these aspects of the recited invention. Consequently, the combination of Goerke et al. with any of the references to Rasums et al., Johansson, Latham et al., Boylestad and Nashelsky do not render obvious the invention as recited in

Rejection of Claims 32 - 36

The independent claim 32 has been amended to recite an aspect of the invention wherein "the first circuit means comprising an RC circuit coupled in a manner to be charged by the power source." A second circuit means is provided for coupling power from the power source to an electronic device, "wherein a voltage developed by the RC circuit is provided to the second circuit means such that power is applied to the electronic device in a gradual manner."

Rasums et al. disclose a bias circuit 105 in Fig. 2. The circuit 105 provides a bias current for powering other circuits 20 - 22, also shown in the figure. It is activated when an applied voltage exceeds the zener voltage of the zener diode D2. Col. 7, lines 41 - 46. Rasums et al. do not disclose a first means comprising "an RC circuit coupled in a manner to be charged by the power source." Nor do Rasums et al. show a "switch [that] is a transistor device having a gate terminal coupled to the RC circuit, so that the switch gradually closes as the RC circuit is charged by the source of power."

The bias circuit 105 does not constitute an RC circuit as recited in amended claim 32. Since the purpose of the Rasums et al. circuit is to provide energy for the other circuits 20 -22 only when the ENABLE signal exceeds a certain threshold (i.e., the zener breakdown voltage), one of ordinary skill in the art would not be motivated to substitute the bias circuit with an RC combination. For at least this reason, it is believed the Section 103 rejection of the claims is believed to be overcome.

Claims 7 - 10


The disposition of claims 7 - 10 has not been made. These claims are believed to be allowable.

CONCLUSION

In view of the foregoing, it is believed all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,



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